

## **Abstract**

This invention relates to a method for producing chromates, especially for producing alkali metal chromates. The method comprises following steps: the obtaining of a mixture of alkali metal hydroxide, alkali metal chromate, and ferrous residue after the reaction of chromite ore with an oxidant in the reactor in the presence of molten salt or in aqueous solution of alkali metal hydroxide, the obtaining of a leaching slurry by leaching the reaction products with aqueous solution of alkali metal hydroxide, the separating of the primary chromate product from the leaching slurry, the obtaining of pure chromate crystal by purifying the primary chromate product. Both the primary chromate product and the pure chromate crystal can be used as the raw materials to manufacture other chromium compounds. Compared with the currently-used roasting method, the method has the advantages of decreasing the reaction temperature by about 700 °C, of improving the chromium recovery rate up to nearly 100%, of minimizing the amount of the ferrous residue by not adding calcium-containing auxiliaries, and of completely eliminating the disposal problem of the chromium-containing residue and the environmental pollution due to the addition of calcium-containing auxiliaries, by using ferrous residue as the raw materials for other industries after extraction of magnesium.